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18-DEC-2004 22:13 FROM MIONS PRO

*Original sent by mail
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*receipt by fax
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International application number:
Title:
Inventor:
Applicant:
Priority application No.:

PCT/IB2003/002316
"Disposable Intestinal Intubator with Drain and Irrigator"
Sergey Matasov
Sergey Matasov
P-02-11 from 21.06.2002

listing contents of submission at entry into the

Mailing date: December 7, 2004

- | | | |
|--|----------|-----------|
| 1. Transmittal letter concerning a submission | 2 sheets | in 1 copy |
| 2. Credit Card Payment Form | 1 sheet | in 1 copy |
| 3. Statement claiming small entity status (oath of inventor) | 1 sheet | in 1 copy |
| 4. Verified translation of international PCT application into English: | | |
| • request | 3 sheets | in 1 copy |
| • description | 8 sheets | in 1 copy |
| • originally filed claims | 1 sheet | in 1 copy |
| • claims (amended according to PCT Art. 19) | 1 sheet | in 1 copy |
| • drawings | 2 sheets | in 1 copy |
| • abstract | 1 sheet | in 1 copy |
| 5. Copy of amended claims according to PCT Art. 19 | 1 sheet | in 1 copy |
| 6. Amended claims (according to PCT Art. 41) | 1 sheet | in 1 copy |
| 7. Copy of inventors certificate № 1592990 (SU) | 3 sheets | in 1 copy |
| 8. Verified translation of inventors certificate № 1592990 (SU) | 3 sheets | in 1 copy |

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**TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A SUBMISSION UNDER 35 U.S.C. 371**

PTO-1390 (Rev. 10-2004)
Approved for use through 3/31/2007. OMB 0851-0021
U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

ATTORNEY'S DOCKET NUMBER

U.S. APPLICATION NO. (if known, see 37 CFR 1.5)

INTERNATIONAL APPLICATION NO.
PCT/IB03/0002316

DATE OF RECEIPT
16 DEC 2004

PRIORITY DATE CLAIMED
21 June 2002 (21.06.2002)

TITLE OF INVENTION
DISPOSABLE INTESTINAL INTUBATOR WITH

APPLICANT(S) FOR DO/EO/US MATASOV, Serge;

Applicant herewith submits to the United States Designated/Elected Office the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a submission under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a submission under 35 U.S.C. 371.
3. ☐ This is an express request to begin national examination procedures (35 U.S.C. 371(i)). The submission must include items (5), (6), (8) and (21) indicated below.
4. ☒ The US has been elected (Article 31).
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
 - a. ☐ is attached hereto (required only if not communicated by the International Bureau).
 - b. ☒ has been communicated by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ An English language translation of the International Application as filed (35 U.S.C. 371(c)(2))
 - a. ☒ is attached hereto.
 - b. ☐ has been previously submitted under 35 U.S.C. 154(d)(4).
7. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
 - a. ☒ are attached hereto (required only if not communicated by the International Bureau).
 - b. ☐ have been communicated by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
 - d. ☐ have not been made and will not be made.

8. ☒ An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☐ An English language translation of the annexes of the International Preliminary Examination Report under PCT Article 35 (35 U.S.C. 371(c)(5)).

Items 11 to 20 below concern document(s) or information included:

11. ☐ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A preliminary amendment of claims.
14. ☐ An Application Data Sheet under 37 CFR 1.76.
15. ☐ A substitute specification.
16. ☐ A power of attorney and/or change of address letter.
17. ☐ A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 37 CFR 1.821-1.825.
18. ☐ A second copy of the published International Application under 35 U.S.C. 154(d)(4).
19. ☐ A second copy of the English language translation of the International Application under 35 U.S.C. 154(d)(4).
20. ☒ Other items or information: 1. Copy of inventor's certificate SU 1000000 (3 sheets); 2. Verified translation of inv. cert. SU 1000000 (3 sheets)

This collection of information is required by 37 CFR 1.414 and 1.491-1.492. The information is required to obtain or retain a benefit by the public, which is to be (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 15 minutes to complete, including gathering information, preparing, and submitting the completed form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop PCT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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PTO/SSA/39 (12-97)

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Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

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**STATEMENT CLAIMING SMALL ENTITY STATUS
(37 CFR 1.9(f) & 1.27(b))—INDEPENDENT INVENTOR**

Docket Number (Optional)

Applicant, Patentee, or Identifier: MATASOV SergeyApplication or Patent No.: PCT/RU 2003/002316Filed or Issued: intern. filing date 16 June, 2003Title: DISPOSABLE INTESTINAL INTUBATOR WITH DRAIN AND IRRIGATOR

As a below named inventor, I hereby state that I qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees to the Patent and Trademark Office described in:

- ☐ the specification filed herewith with title as listed above.
- ☒ the application identified above.
- ☐ the patent identified above.

I have not assigned, granted, conveyed, or licensed, and am under no obligation under contract or law to assign, grant, convey, or license, any rights in the invention to any person who would not qualify as an independent inventor under 37 CFR 1.9(c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9(d), or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern, or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

- ☒ No such person, concern, or organization exists.
- ☐ Each such person, concern, or organization is listed below.

Separate statements are required from each named person, concern, or organization having rights to the invention stating their status as small entities. (37 CFR 1.27)

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

MATASOV Sergey

NAME OF INVENTOR

Signature of inventor

NAME OF INVENTOR

Signature of inventor

NAME OF INVENTOR

Signature of inventor

12 November 2004

Date

Date

Date

Shorten Your Statement: This form is estimated to take 0.2 hours to complete. This will vary depending upon the needs of the individual case. Any comments on this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

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PCT**REQUEST**

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

For receiving Office use only

International Application No.

International Filing Date

Name of receiving Office and "PCT International Application"

Applicant's or agent's file reference (if desired) (12 characters maximum) CIDI_210602

Box No. I TITLE OF INVENTION	
DISPOSABLE INTESTINAL INTUBATOR WITH DRAIN AND IRRIGATOR	
Box No. II APPLICANT	<input checked="" type="checkbox"/> This person is also inventor
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)	
MATASOV Sergey Ranka dambis 7/1-55, Riga, LV1048, Latvia	
State (that is, country) of nationality: Latvia (LV)	State (that is, country) of residence: Latvia (LV)
This person is applicant for the purposes of: <input checked="" type="checkbox"/> all designated States <input type="checkbox"/> all designated States except the United States of America <input type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box	
Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)	
This person is: <input type="checkbox"/> applicant only <input type="checkbox"/> applicant and inventor <input type="checkbox"/> inventor only (If this check-box is marked, do not fill in below.)	
Applicant's registration No. with the Office	
State (that is, country) of nationality:	State (that is, country) of residence:
This person is applicant for the purposes of: <input type="checkbox"/> all designated States <input type="checkbox"/> all designated States except the United States of America <input type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box	
<input type="checkbox"/> Further applicants and/or (further) inventors are indicated on a continuation sheet.	
Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE	
The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as: <input type="checkbox"/> agent <input type="checkbox"/> common representative	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)	
MATASOV Sergey Ranka dambis 7/1-55, Riga, LV1048, Latvia	
Telephone No. +371 9116620	
Facsimile No. +371 7804281	
Teleprinter No.	
Agent's registration No. with the Office	
<input checked="" type="checkbox"/> Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.	

Form PCT/IB03/101 (first sheet) (January 2004)

See Notice to the Applicant Form

Sheet No.

Box No. V DESIGNATIONS

The filing of this request constitutes under Rule 4.9(a), the designation of all Contracting States bound by the PCT on the international filing date, for the grant of every kind of protection available and, where applicable, for the grant of both regional and national patents. However,

- ☐ DE Germany is not designated for any kind of national protection
- ☐ KR Republic of Korea is not designated for any kind of national protection
- ☐ RU Russian Federation is not designated for any kind of national protection

(The check-boxes above may be used to exclude (irrevocably) the designations concerned in order to avoid the ceasing of the effect, under the national law, of an earlier national application from which priority is claimed. See the Notes to Box No. V as to the consequences of such national law provisions in these and certain other States.)

Box No. VI PRIORITY CLAIM

The priority of the following earlier application(s) is hereby claimed:

Filing date of earlier application (day/month/year)	Number of earlier application	Where earlier application is:		
		national application: country or Member of WTO	regional application: regional Office	international application: receiving Office
item (1) 21/June/2002	P-02-117	Latvia (LV)		
item (2)				
item (3)				

- ☐ Further priority claims are indicated in the Supplemental Box.

The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) (only if the earlier application was filed with the Office which for the purposes of this international application is the receiving Office) identified above as:

- ☒ all items ☐ item (1) ☐ item (2) ☐ item (3) ☐ other, see Supplemental Box

* Where the earlier application is an ARIPO application, indicate at least one country party to the Paris Convention for the Protection of Industrial Property or one Member of the World Trade Organization for which that earlier application was filed (Rule 4.10(b)(ii))

Box No. VII INTERNATIONAL SEARCHING AUTHORITY

Choice of International Searching Authority (ISA) (if two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used):

ISA / EP (European Patent Office)

Request to use results of earlier search; reference to that search (if an earlier search has been carried out by or requested from the International Searching Authority):

Date (day/month/year) Number Country (or regional Office)

Box No. VIII DECLARATIONS

The following declarations are contained in Boxes Nos. VIII (i) to (v) (mark the applicable check-boxes below and indicate in the right column the number of each type of declaration):

Number of
declarations

- ☐ Box No. VIII (i) Declaration as to the identity of the inventor
- ☐ Box No. VIII (ii) Declaration as to the applicant's entitlement, as at the international filing date, to apply for and be granted a patent
- ☐ Box No. VIII (iii) Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application
- ☐ Box No. VIII (iv) Declaration of inventorship (only for the purposes of the designation of the United States of America)
- ☐ Box No. VIII (v) Declaration as to non-prejudicial disclosures or exceptions to lack of novelty

Form PCT/IB/101 (second sheet) (January 2004)

See Notes to the applicant form

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Sheet No.

Box No. IX CHECK LIST: LANGUAGE OF FILING

This international application contains:		This international application is accompanied by the following item(s) (mark the applicable check-boxes below and indicate in right column the number of each item):		Number of items
(a) In paper form, the following number of sheets:		1. <input checked="" type="checkbox"/> fee calculation sheet		1
request (including declaration sheets)	: 6	2. <input type="checkbox"/> original separate power of attorney		
description (excluding sequence listing and/or tables related thereto)	: 8	3. <input type="checkbox"/> original general power of attorney		
claims	: 1	4. <input type="checkbox"/> copy of general power of attorney; reference number, if any:		
abstract	: 1	5. <input type="checkbox"/> statement explaining lack of signature		
drawings	: 2	6. <input checked="" type="checkbox"/> priority document(s) identified in Box No. VI as item(s): P-02-117, LV, 21 June 2002		1
Sub-total number of sheets:	18	7. <input checked="" type="checkbox"/> translation of international application into (language): ENGLISH		1
sequence listing		8. <input type="checkbox"/> separate indications concerning deposited microorganism or other biological material		
tables related thereto (for both, actual number of sheets if filed in paper form, whether or not also filed in computer readable form; see (c) below)		9. <input type="checkbox"/> sequence listing in computer readable form (indicate type and number of carriers)		
Total number of sheets	18	(i) <input type="checkbox"/> copy submitted for the purposes of international search under Rule 13ter only (and not as part of the international application):		
(b) <input type="checkbox"/> only in computer readable form (Section 801(a)(i))		(ii) <input type="checkbox"/> (only where check-box (b)(i) or (c)(i) is marked in left column) additional copies including, where applicable, the copy for the purposes of international search under Rule 13ter		
(i) <input type="checkbox"/> sequence listing		(iii) <input type="checkbox"/> together with relevant statement as to the identity of the copy or copies with the sequence listing mentioned in left column		
(ii) <input type="checkbox"/> tables related thereto		10. <input type="checkbox"/> tables in computer readable form related to sequence listing (indicate type and number of carriers)		
(c) <input type="checkbox"/> also in computer readable form (Section 801(a)(ii))		(i) <input type="checkbox"/> copy submitted for the purposes of international search under Section 802(b-quater) only (and not as part of the international application)		
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(ii) <input type="checkbox"/> tables related thereto		(iii) <input type="checkbox"/> together with relevant statement as to the identity of the copy or copies with the tables mentioned in left column		
Type and number of carriers (diskette, CD-ROM, CD-R or other) on which are contained the		11. <input checked="" type="checkbox"/> other (specify): Translation of priority document into English		1
<input type="checkbox"/> sequence listing;		Copy of inventor's certificate 1592990 (SU)		1
<input type="checkbox"/> tables related thereto:		Translation of inventor's certificate into English		1
(additional copies to be indicated under items 9(ii) and/or 10(ii), in right column)				

Figure of the drawings which should accompany the abstract:

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Language of filing of

the international application:

RUSSIAN

Box No. X SIGNATURE OF APPLICANT, AGENT OR COMMON REPRESENTATIVE

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).

signature

MATASOV Sergey

For receiving Office use only

1. Date of actual receipt of the purported international application:	2. Drawings: <input type="checkbox"/> received: <input type="checkbox"/> not received:
3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application:	
4. Date of timely receipt of the required corrections under PCT Article 11(2):	
5. International Searching Authority (if two or more are competent): ISA /EP	6. <input type="checkbox"/> Transmittal of search copy delayed until search fee is paid

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by the International Bureau:

Form PCT/IB03/02316 (last sheet) (January 2004)

See Notes to the applicant form

Translation of originally filed application.

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PCT/IB2003/002316

DISPOSABLE INTESTINAL INTUBATOR WITH DRAIN AND IRRIGATOR

5 This is the continuation of the priority application LV P-02-117 from 21.06.2002.
and USSR inventor's certificate No. 1592990 from 15.05.1990, which was not
published before.

BACKGROUND OF THE INVENTION.

TECHNICAL FIELD.

10 The invention pertains to medicine and is intended for the guaranteed evacuation of
cavities' contents, and of the wounds of organism, in particular for colon
decompression.

BACKGROUND ART.

15 The sharp problem in abdominal surgery is the treatment and prophylaxis of post-
operation complications, concerned with loss of hermeticity of intestinal
anastomoses. For example, after the operation of removal of obturating colon
tumor, the abundance of intestinal contents and high intrainestinal pressure could
become the reason of unhermetization of intestinal sutures and of the following
20 peritonitis, mortality of which reaches 75-90 %.

Today for colon unloading surgeons are making colostoma, which causes serious
inconveniences to patient and requires an additional operation for its closure. In a
number of countries colon unloading during and after operation is realized by drains
25 in the shape of tubes, having lateral openings. However, because of the large
dimension of lateral openings, the drain tube is rapidly clogged up with a dense
colon contents. Its abluion is possible only on the short length, nearest to anal
channel.

30 Problem of intestinal drains is organically connected with the problem of those insertion
into the large intestine, as well as into the small intestine. Insertion of tubular drain is
realized by the palpatory method during the operation. However, the fumbling of drain
tube and its pushing through intestine, as well as gathering of intestines on the tube,
is very prolonged and traumatic procedure, fraught with paresis of intestines. For
35 facilitation of intubation surgeons prefer resilient drains. Moreover, non-resilient
drains are disposed to overbendings.

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closing those lumen. However during the post-operation period the protracted pressure of resilient tubular drain on the traumatic intestinal wall could lead to its perforation.

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There is known the non-resilient "Intestinal drain" which excludes overbendings and allows the filtration of intestinal contents. It is performed in the shape of metal spiral, enclosed in the knitted sheath (see inventors certificate of USSR № 927254 from 14.01.1982). However it is also clogged up with intestinal contents. Besides, the

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insertion of such a drain into colon by the palpatory method is practically excluded.

For the insertion of the "Intestinal drain" it was combined with the "Intestinal Intubator" (see inventors certificates of USSR № 839553 from 20.02.1981, № 1055519 from 22.07.1983, № 1084028 from 08.12.1983, № 1377123 from 01.11.1987, № 1049067

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from 22.06.1983) which comprises an everting thin-wall tube - the so-called invaginator. Transportation of invaginator together with the drain enclosed in it towards the place of invaginator's eversion is realized by the principle «pull-and-push», in other words, by the synergy of vanguard and rearguard forces. Pulling of the non-everted part of invaginator realizes the invaginator itself during its eversion, but the

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pushing is realized by intractor - a resilient tube, disposed parallel to the non-everted part of invaginator. The internal end of such parallel intractor has a capture of non-everted part of invaginator, but the external one through the compaction in the wall of chamber is brought out of it. During the insertion of intractor, the invaginator everts, thus unloading the drain, enclosed therein, on intestinal mucosa.

25

The exploitation of the aforesaid "Intestinal Intubator with Drain" requires the coordinated actions of an operating surgeon and an assistant, who operates the device. The assistant, under surgeon's command, connects intractor with invaginator and by hand moves intractor inside. At that time the operating surgeon directs the everting invaginator into colon curves. The fact of reaching by intractor of invaginator's

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place of eversion is palpatory fixed by operating surgeon. Then the assistant, under surgeon's command, releases intractor from invaginator and returns for its new portion.

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The above-mentioned "Intestinal Intubator with Drain" is taken as the prototype of the present invention. To the defects of the prototype belongs drain's occlusion by intestinal contents, as well as the inconvenience of its insertion:

- 5 ▪ the surgeon palpates the everting invaginator, but, being bind with sterility requirements, can not make its feeding;
- the assistant by manipulation of intractor, realizes feeding of invaginator, but, being devoided of possibility to palpate the invaginator, inevitably commits errors.

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DISCLOSURE OF INVENTION

The invention pertains to abdominal surgery and pursues the elimination of above-mentioned defects, i.e. the achievement of two aims:

- 15 ▪ ensuring of reliable evacuation of intestinal contents;
- enabling an opportunity to operating surgeon to realize intestines intubation himself.

Theoretically realization of the first aim is connected with creation of:

- 20 – the influx-and-extract system of intestinal contents evacuation;
- the possibility to dilute the intestinal contents;
- the possibility to restore the permeability of the drain's wall and channel.

Practically the first aim is achieved by the fact, that the drain-irrigation system of the device includes a hose, which is made from polyurethane, for example "Elastollan 1180 A 10". In standard the hose is flattened. After connecting of hose to the negative
25 pressure, its cavity is liquidated completely. After connection of hose to the, excess pressure, it inflates and turns into the tube. The resilience of such a tube depends on the pressure of gas and/or liquid, included inside it. For restoration of permeability of wall and channel of drain and for dilution of intestinal contents, the hose, located in the drain, has plural punctures or holes of minimal dimension. Such hose with
30 punctures could be located not only in drain, but also in invaginator. In case of using of hose as a tensioning device of drain and simultaneously as its recanalizator, the wall of hose could be hermetic. For increasing of drain's resiliency during intubation and its following recanalization and irrigation, the hermetic hose could be enclosed in the hose with punctures.

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The second aim of invention is achieved by the fact, that the claimed intestinal intubator with drain comprises:

- the feeder of invaginator with drain and of intractor, which ensures the rearguard intubating force,
- the invaginator, which repeats the form of the drain enclosed in it, and is made from the polyurethane, for example, the "Elastollan 1180 A 10",
- the drain with resilience, ensuring the insertion of invaginator with drain,
- the intractor, sequentially connected with invaginator and drain,
- the flexible anal-sigmoid tubus with obturator.

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In the feeder of Invaginator with drain and intractor the „cylinder-piston" unit and pneumatic capture with cuff are used. Cylinder is made in the branch pipe of reel and communicates with the source of negative or excess pressure. In the cylinder there is placed the carriage, consisting of the hollow piston and tube, interconnected by cuff and its distancer. The tube of carriage has the external compaction, fixed in the branch pipe of reel. At feeding of excess pressure into the cavity between the piston and external compaction in the branch pipe, the cuff squeezes the invaginator with drain or the intractor and they together with carriage are moving in a distal direction. At feeding into the same cavity of negative pressure, the cuff release the invaginator with drain or the intractor, and carriage under the action of negative pressure is shifting in the original position. The cuff of the feeder could be made from polyurethane, for example "Elastollan 1180 A 10".

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The drain could be made in the shape of spiral spring, enclosed in the sheath with cells. The resilience, necessary for the feeding and then for the intraction of invaginator with drain, could be achieved by selection of the corresponding spring, as well as by arranging in it of pneumatic or hydraulic tensioning device in the shape of hose.

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The intractor could be made in the shape of tube, which is sequentially, i.e. „end to end", connected to the invaginator with drain. The definite resilience of tube could be ensured by definite thickness of its wall and by the material, for example, silicone. The resilience of intractor could decrease toward the distal direction (as at the twig).

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The flexible anal-sigmoid tubus consists of two short sleeves, connected by the flexible tube, its obturator – from the handle and olive, connected by spring.

BRIEF DESCRIPTION OF DRAWINGS

5 The means, ensuring intubation of intestines, are illustrated on drawing 1/2, where:

Fig. 1 – the reel with a branch pipe, a carriage, an anal collector with a connecting pipes as an assembly on the section;

Fig. 1A, Fig. 1B – enlarged fragments of Fig. 1;

10 Fig. 2 – the section of the carriage of the feeder under feeding of negative pressure in it;

Fig. 2A, Fig. 2B – enlarged fragments of Fig. 2;

Fig. 3 – the section of the carriage of the feeder beyond the branch pipe under feeding of excess pressure in it;

Fig. 3A, Fig. 3B – enlarged fragments of Fig. 3.

15 The means, ensuring the reliable evacuation of intestinal contents, are illustrated on the figures on the drawing 2/2, where is represented the condition of drain-irrigation system of the device in the main moments of its work:

Fig. 4 – the system in the „evacuation“ mode;

20 Fig. 4A – the A-A section of Fig. 4;

Fig. 5 – the system in the "recanalization-irrigation of drain", "irrigation of intestines" mode;

Fig. 5A – the A-A section of Fig. 5;

25 Fig. 6 – the system in the "irrigation of intestines", "recanalization of drain" mode at use of the hose with hermetical wall as a tensioning device of invaginator with drain;

Fig. 6A – the A-A section of Fig. 6.

BEST MODE FOR CARRYING OUT THE INVENTION

The description of the intubator with drain and irrigator comprises:

30 1 - the reel;

2 - the branch pipe;

3 - the compaction of tube 12;

4a - the cavity of cylinder, limited by the compactions 3 and 9;

35 4b - the cavity of cylinder, communicated with the everted part 16 of invaginator;

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- 5 - the connecting pipe for feeding of the negative/excess pressure into the cavity 4a;
- 6 - the distal end of the branch pipe 2;
- 7 - the connecting pipe for feeding of pressure into the cavity 4b and the everted part 16 of invaginator;
- 8 - the piston of carriage;
- 9 - the compaction of the piston 8;
- 10 - the cuff of the carriage;
- 11 - the cavity of the cuff 10;
- 12 - the tube of the carriage;
- 13 - the distancer of the carriage between the piston 8 and the tube 12;
- 14 - the holes in the distancer 13, which unite its cavity with the cavity of the cylinder 4a;
- 15 - the uneverted part of invaginator, which include the drain 17 and the hose 19;
- 16 - the everted part of invaginator;
- 17 - the drain;
- 18 - the hose, located beyond the drain 17;
- 19 - the hose, enclosed in the drain 17;
- 20 - the intractor;
- 21 - the cavity of the intractor 20;
- 22 - the connecting pipe, uniting cavity 21 of intractor 20 with the cavity of drain 17;
- 23 - the line, indicating the proximal position of the carriage;
- 24 - the line, indicating the distal position of the carriage;
- 25 - the anal collector;
- 26 - the connecting pipe "evacuation", communicating with cavity of the drain 17;
- 27 - the connecting pipe of the hose 19;
- 28 - the cecum;
- 29 - the small spurts of cleansing agent;
- 30 - the arrows, indicating the direction of gas or liquid current.

30

The sterilization of the disposable elements of the device is fulfilled by manufacturer.

Having removed colon tumour and putted anastomosis, a surgeon makes a resolve about intubation of intestine and then a personnel puts a patient in the position as for the perineal lithotomy, extracts the device illustrated on Fig. 1 from the sterile vacuum packaging and connects it with the sources of the excess and

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negative pressure. The connecting pipe 5 is joined with the switch „negative/excess” pressure, located on the pedal at the foot of operating surgeon. The connecting pipe 7 is joined with compressor, which creates a working pressure in the cavity 4b communicated with the everted part 16 of invaginator. The connecting pipe 26 is
5 joined to the container of electric aspirator, but the connecting pipe 27 -- to the container with cleansing agent.

Then the assistant introduces into the patient's rectum the flexible anal-sigmoidal tubus, takes out of it obturator and by the anal collector 25 hermetically connects the
10 distal end 6 of the branch pipe 2 with the anal sleeve of tubus. The preparation for intubation is completed by fastening of the device on the tripod, placing of pedals at the foot of operating surgeon and switching on of the compressors.

The negative pressure, created in cavity 4a, press the cuff 10 to the inner diameter of
15 distancer 13. At pressing on the pedal, negative pressure in the cavity 4a changes on the excess one and cavity 11 disappears, but the cuff 10 hermetically envelopes and squeezes the uneverted part 15 of invaginator with the drain 17, enclosed in it. In such a way the cavity 4b and everted part 16 of invaginator are cutting off from the atmosphere. Due to the compressed cuff 10 and the compressor, permanently
20 connected with connecting pipe 7, in the cavity 4b and in the everted part 16 of invaginator, which continues this cavity, the pressure is created, which everts the invaginator. At the same time the pressure in cavity 4a reaches the level, which ensures the displacement of carriage till the line 24. Due to the eversion, from the invaginator on mucosa the drain 17 and the hose 18 are unloaded. When the distance
25 between lines 23 and 24 is 100 mm, the intestine is intubated on the same distance. The surgeon not only presses on pedal, but also by hands through the wall of intestine directs invaginator's eversion in its natural curves.

When the pedal is released, the negative pressure in cavity 4a again presses the cuff
30 10 to the periphery, releases the uneverted part 15 of invaginator and returns the carriage to the line 23. One intubation cycle include one pressure on pedal and thus the change of the negative pressure on the excess one in the cavity 4a. By the definite number of such a cycles the whole colon is intubated.

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A gas, which is feeding in the intestine 28 through the external end of intractor 20 along its channel 21, as well as a weak negative pressure, created through the connecting tube 26 in the channel of drain 17, realize the unloading of colon according to the influx-and-extract principle, which exclude the sticking of drain 17 to mucosa, as well as reduce the probability of fast occlusion of drain 17.

Recanalization and ablation of the wall of drain 17, and then the irrigation of colon is realized through the hose 19 by connecting of liquid pressure to the connecting pipe 27. Firstly the liquid increase the volume of hose 19 up to the inner diameter of drain's 17 spring and through the cells of sheath squeezes out the intestinal contents, which get there. After achieving in the hose 19 of definite pressure, liquid directs to the punctures of its wall and begin to wash the sheath of the drain. Simultaneously liquid arrives in the cavity of intestine and dilute its contents. In case of use of two hoses 19 and 18, the speed of irrigation of intestines increases.

Recanalization-irrigation of drain and irrigation of intestines should be alternated by evacuation of it's contents. For speeding-up of evacuation the cavity 21 of intractor 20 could be used, the external end of said intractor, as well as connecting tube 26, should be connected to the negative pressure.

20

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Claims as originally filed

CLAIMS

I claim:

1. A device for evacuation of contents, comprising a hose.
- 5 2. The device according to claim 1, wherein the wall of the hose has punctures or/and perforations.
3. The device according to claim 1 or 2, wherein the hose is placed into a drain.
4. The device according to claim 3 further comprising a feeder of invaginator with drain and their
10 intractor in the shape of cylinder, wherein is placed a carriage, consisting of a hollow piston and a
tube, interconnected by cuff and its distancer, said tube has a compaction, fastened in the
cylinder.
5. The device according to claim 4, wherein the invaginator repeats the form of the drain.
- 15 6. The device according to claim 4 further comprising a drain, the resilience of drain ensure the
feeding and intraction of invaginator with drain.
7. The device according to claim 4 further comprising an intractor of invaginator with drain in the
20 shape of a tube, which is sequentially connected with the drain.
8. The device according to any of claims 4 to 7 further comprising a flexible anal-sigmoid tubus,
made from two sleeves, joined by a flexible tube, but obturator of tubus – from the handle and
olive, connected by spring.
- 25 9. The device according to claim 8, wherein the invaginator, the hose, a cuff of the feeder and the
flexible tube of anal-sigmoid tubus are made from a polyurethane.
10. A two-forced method of insertion of drain into a prolonged cavity, comprising:
30
 - a feeding of an excess pressure into the everted part of invaginator,
 - an alternation of the negative and excess pressure in the cavity of the cuff of
the feeder of invaginator with drain.
11. An influx-and-extract method of evacuation of a content of cavities, comprising:
35
 - connection of an external end of the drain to the negative pressure,
 - periodical feeding of liquid into the hose,
 - connection of external end of intractor to the negative pressure or atmosphere
or minimal excess pressure.

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Replacement sheet under PCT Article 19

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CLAIMS

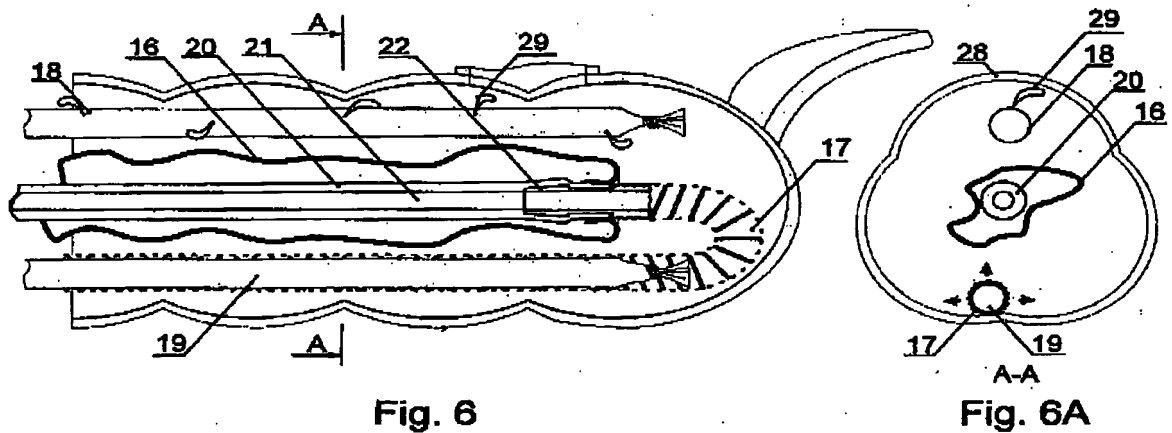
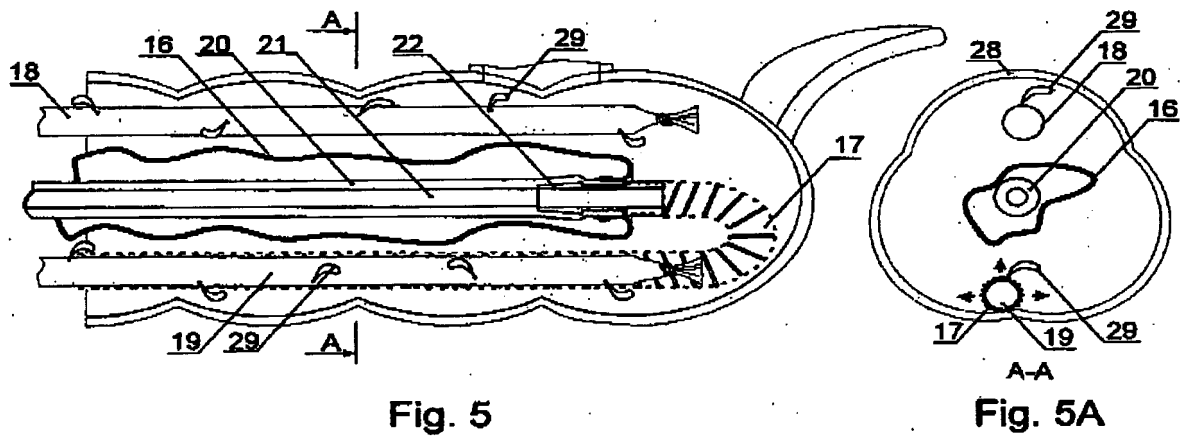
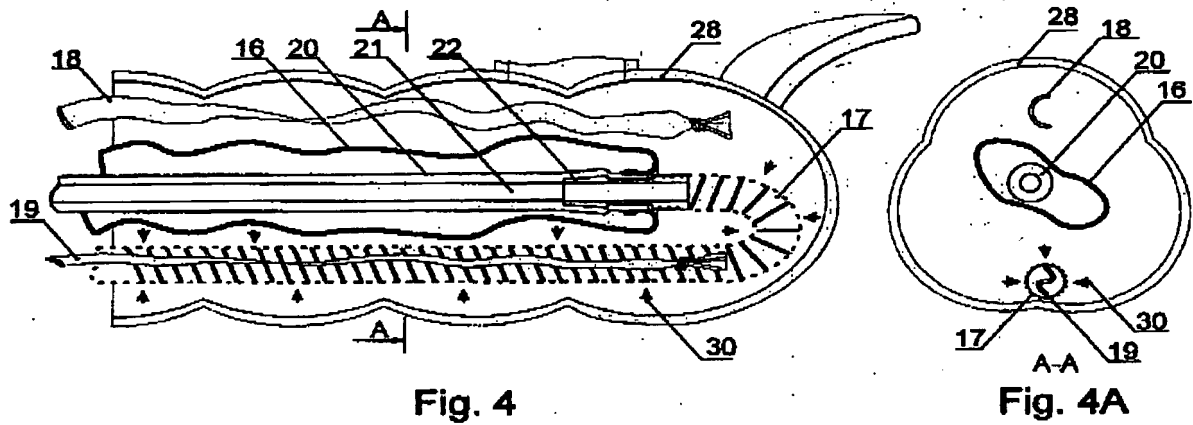
[received by International Bureau on April 13th, 2004 (13.04.2004); originally filed claims 1-11 are replaced by amended claims 1-10; originally filed claim 5 is cancelled (1 page)]

5 1 claim:

1. A device for cavity's draining and decompression comprising a hose which flattens under feeding of a negative fluid pressure inside it and shapes a cylinder under feeding of an excess fluid pressure.
2. The device according to claim 1, wherein the hose has punctures or microperforations.
- 10 3. The device according to claim 1 or 2, wherein the hose is placed inside a drain.
4. The device according to claim 2, wherein the hose is placed alongside the drain.
5. The device according to claim 1 or 2, further comprising:
 - a) a reel with a branch pipe wherein an invaginator with the drain and an intractor are placed in one layer;
 - 15 b) the drain with resilience ensuring its intraction into the everted part of said invaginator;
 - c) the intractor connected end to end with said drain;
 - d) a feeder of the invaginator with drain and of the intractor, placed in the branch pipe and which is a cylinder with a carriage composed of a hollow piston and a tube which are interconnected by a cuff and a distancer, while said tube has a compaction fastened in
 - 20 the cylinder.
6. The device according to claim 5 further comprising a removable anal collector of said invaginator, drain and hose, which connects the branch-pipe with an anal-sigmoid tubus.
7. The device according to claim 6 further comprising an anal-sigmoid tubus made of two sleeves, joined by a flexible tube, but obturator of tubus – from a handle and an olive, connected by a
- 25 flexible element.
8. The device according to claim 5, wherein the hose, the invaginator and the cuff of the feeder are made from a polyurethane.
9. The device according to claim 5, wherein drain's insertion is realized by a two-forced method comprising:
 - 30 • a feeding of an excess fluid's pressure into the everted part of invaginator,
 - an alternation of the negative and excess fluid's pressure into the cavities of the cuff of the feeder of invaginator with drain.
10. The device according to claim 5, wherein cavity's emptying is realized by an influx-and-extract method, comprising an alternation of excess liquid pressure feeding into the hose and
- 35 linking of external ends of the hose, drain, intractor to the negative pressure.



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THE ABSTRACT

The invention is intended for secure emptying of organism's cavities, particularly for colon decompression. The device combine the drain with means of its delivery in the shape of
5 everting by fluid invaginator, comprising the drain, as well as their intractor.

The secure emptying of cavity is ensured by a hose with punctures, placed in drain. The liquid, feeding into hose, realizes drain's recanalization, irrigates its holes and dilutes cavity contents.

10 Transportation of drain into colon is ensured by synergy of two intubation forces. The vanguard force is generated by fluid pressure which everts invaginator, the rearguard (extraanal) - by "cylinder-piston" unit with a cuff. The hollow unit's piston acts as pneumatic carriage, but cuff is periodically joining with invaginator with drain or their intractor.

15 Evacuation of contents is ensured by influx-and-extract method. The sequential connection of intractor and drain ensures not only intubation, but also contents' evacuation through both ends of drain.

20 On the drawing is represented cecum with a distal fragment of drain-irrigation system of device: at left - in "evacuation" mode, at right - in "drain's recanalization-irrigation", "intestines irrigation" mode.

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ФОРМУЛА ИЗОБРЕТЕНИЯ**Заявляется:**

1. Устройство для эвакуации содержимого, которое включает рукав.
- 5 2. Устройство по п. 1, в котором стенка рукава имеет проколы или/и перфорации.
3. Устройство по п. 1 или 2, в котором рукав помещен в дренаж.
- 10 4. Устройство по п. 3, далее включающее механизм подачи инвагинатора с дренажом и их интрактора в виде цилиндра, в котором расположена каретка, состоящая из полого поршня и трубки, которые соединены между собой манжетой и ее дистанцером, а трубка имеет уплотнение, закрепленное в цилиндре.
- 15 5. Устройство по п. 4, в котором инвагинатор повторяет форму дренажа.
6. Устройство по п. 4, далее включающее дренаж, упругость которого обеспечивает подачу и интракцию инвагинатора с дренажом.
- 20 7. Устройство по п. 4, далее включающее интрактор инвагинатора с дренажом в виде трубки, которая последовательно соединена с дренажом.
8. Устройство по любому из пунктов с 4 по 7, далее включающее гибкий анально-сигмоидный тубус, который выполнен из двух втулок, соединенных гибкой трубкой, а
- 25 обтуратор тубуса - из рукоятки и оливы, соединенных пружиной.
9. Устройство по п. 8, в котором инвагинатор, рукав, манжета механизма подачи и гибкая трубка анально-сигмоидного тубуса изготовлены из полиуретана.
- 30 10. Двусильный метод введения дренажа в длинную полость, включающий:
 - подачу избыточного давления в вывернутую часть инвагинатора,
 - чередование отрицательного и избыточного давления в полости манжеты механизма подачи инвагинатора с дренажом.
- 35 11. Приточно-вытяжной метод эвакуации содержимого полостей, включающий:
 - подключение наружного конца дренажа к отрицательному давлению,
 - периодическую подачу жидкости в рукав,
 - подключение наружного конца интрактора к отрицательному давлению или атмосфере или избыточному минимальному давлению.

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Amended claims (PCT Art. 41)

CLAIMS

I claim:

1. An intestinal intubator with drain and irrigator, comprising:
 - a drain enclosed in invaginator,
 - an intractor of invaginator with drain, which is a flexible tube,
 - a feeder of intractor,
 - a reel with a branch pipe,
 - an anal-sigmoid tubus,
 wherein the improvement comprises a hose with punctures, enclosed into the drain.
2. The device according to claim 1, wherein the proximal ends of drain and invaginator are connected with the distal end of intractor.
3. The device according to claim 2, further comprising a feeder of invaginator with drain and intractor, placed in the branch pipe and which is a cylinder with a carriage composed of a hollow piston and a tube which are interconnected by a cuff for the invaginator with drain and intractor and a distancer, while said tube has a compaction fastened in the cylinder.
4. The device according to claim 3, wherein the invaginator with drain and the intractor have a similar diameters and are placed on the reel in one row.
5. The device according to claim 3, further comprising a spiral-knitted drain with a resilience ensuring its intraction.
6. The device according to claim 3, wherein the drain comprises a hose without punctures.
7. The device according to claim 3, wherein the invaginator repeats the form of drain.
8. The device according to claim 2, wherein the anal-sigmoid tubus is made of two sleeves, joined by a flexible tube.
9. The device according to claim 8, further comprising a removable anal collector of said invaginator, drain and hose, which connects the anal sleeve with the branch-pipe.
10. The device according to claim 1, further comprising a hose with punctures placed inside the invaginator alongside the drain.
11. A method of two-forced intestinal intubation, comprising a feeding of excess fluid pressure into the everted part of invaginator, wherein the improvement comprises a change of the negative and the excess fluid pressure in the cavity of a feeder's cuff.
12. An influx-and-extract method of evacuation of intestinal contents, comprising a feeding of negative pressure into the drain, wherein the improvement comprises a change of feeding of fluid pressure into the hose with punctures and connecting of external ends of said hose and of intractor to the negative pressure.

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UNITED STATES PATENT AND TRADEMARK OFFICE
DOCUMENT CLASSIFICATION BARCODE SHEET



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СОЮЗ СОВЕТСКИХ СОЦИАЛИСТИЧЕСКИХ РЕСПУБЛИК
ГОСУДАРСТВЕННЫЙ КОМИТЕТ ПО ИЗОБРЕТЕНИЯМ И ОТКРЫТИЯМ
ПРИ ГОСУДАРСТВЕННОМ КОМИТЕТЕ СССР ПО НАУКЕ И ТЕХНИКЕ
(ГОСКОМИЗОБРЕТЕНИЙ)

АВТОРСКОЕ СВИДЕТЕЛЬСТВО

№

1502090

На основании полномочий, предоставленных Правительством СССР,
Госкомизобретений выдал настоящее авторское свидетельство
на изобретение:
"Кишечный интубатор"

Автор (авторы): Матасов Сергей Александрович

Заявитель: он же

Заявка № 3410701 Приоритет изобретения 23 марта 1982г.

Зарегистрировано в Государственном реестре
изобретений СССР
15 мая 1990г.

Действие авторского свидетельства распро-
страняется на всю территорию Союза ССР.

Председатель Комитета

Начальник отдела



СОЮЗ СОВЕТСКИХ
СОЦИАЛИСТИЧЕСКИХ
РЕСПУБЛИК

ГОСУДАРСТВЕННЫЙ КОМИТЕТ
ПО ИЗОБРЕТЕНИЯМ И ОТКРЫТИЯМ
ПРИ ГИИТ СССР

для служебного пользования экз. 310

(19) **SU** (11) **1592990** **A1**

(51)5 A 61 M 25/00

ОПИСАНИЕ ИЗОБРЕТЕНИЯ К АВТОРСКОМУ СВИДЕТЕЛЬСТВУ

(21) 3410701/28-14
(22) 23.03.82
(72) С.А.Натасов
(53) 615.477.85 (088.8)
(56) Авторское свидетельство СССР
№ 839553, кл. А 61 М 25/00, 1978.

(54) КИШЕЧНЫЙ ИНТУБАТОР

(57) Изобретение относится к медицинским инструментам. Кишечный интубатор для предупреждения травмирования илеоцекального соустья включает тонкостенную трубку из термопластичного

полиуретана с наружным диаметром не более 16 мм, вместилище трубки с возможностью соединения с источником давления и интрактор невывернутой части трубки. Используя кишечный интубатор, можно пройти стриктуры кишечника и в ряде случаев осуществить прохождение обтурирующих опухолей, а также можно осуществить интубацию любого отдела желудочно-кишечного тракта, не травмируя илеоцекальное соустье за счет используемого термопластичного полиуретана. 1 ил.

Изобретение относится к медицине, в частности к устройствам для инструментальной (пневматической или пневмомеханической) транспортировки в желудочно-кишечный тракт диагностических лечебных средств.

Цель изобретения - предупреждение травмирования илеоцекального соустья.

На чертеже изображен предлагаемый интубатор, общий вид.

Интубатор содержит тонкостенную трубку 1, вместилище, имеющее возможность соединения с источником давления и выполненное в виде камеры 2 из прозрачного материала, манометр 3, сообщающийся с полостью камеры 2, размещенную в камере 2 катушку 4, на которой размещена трубка 1. Трубка 1 выполнена из термопластичного полиуретана и имеет наружный диаметр не более 16 мм. Камера 2 имеет патрубок 5 для закрепления вывернутого

конца 6 трубки 1. Интубатор также имеет интрактор с упругой трубкой 7, пневмоманжеткой 8 и манометр 9.

После проведения трубки 7 интрактора в канале камеры 2 и вывода ее за пределы патрубка 5 к трубке 7 подсоединяют манжетку 8. Конец трубки 1 с заключенным внутри нее кишечным дренажом 10 проводят внутри манжетки 8. Затем конец 6 трубки 1 выворачивают руками на патрубок 5 и герметично фиксируют к нему.

Под действием давления рабочей среды 11 (воздуха) полиуретановая профилированная тонкостенная трубка 1 выворачивается в кишечник 12, не растягивая его стенки и освобождая при этом заключенный в ней дренаж 10.

Начиная с глубины около 1 м интубация возможна только с помощью интрактора. Соединением наружного конца упругой трубки 7 интрактора с ис-

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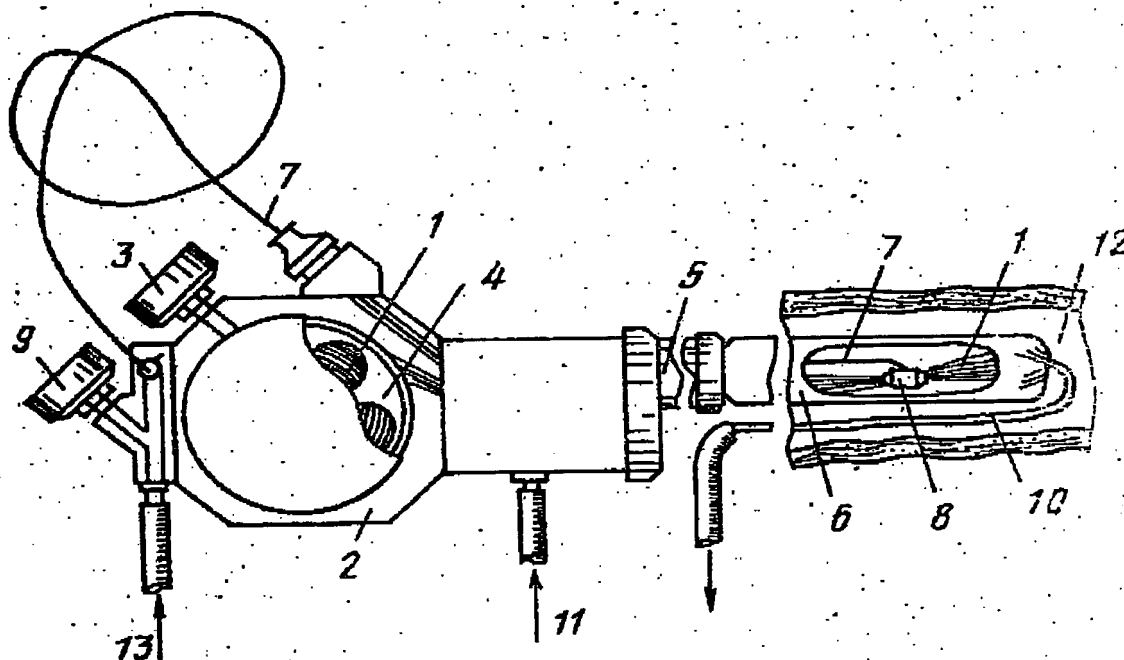
с помощью 13 давления посредством раз-
дутия пневмоманжеты 8 достигается
присоединение к нему полиуретановой
профилированной тонкостенной трубки
1. Путем ручного введения упругой
трубки 7 интрактора в полость каме-
ры 2 и вывернутого конца 6 трубки 1
осуществляют пневмомеханическую инту-
бацию кишечника. Введение и извлече-
ние интрактора (трубки 7) осуществляют
до полного выворачивания трубки 1.

Используя кишечный интубатор, мож-
но пройти стиктуры кишечника, а так-
же в ряде случаев осуществить прохож-
дение обтурирующих опухолей. Можно

осуществить интубацию любого отдела
желудочно-кишечного тракта, не травми-
руя илеоцекальное соустье.

5 Ф о р м у л а и з о б р е т е н и я

Кишечный интубатор, включающий
тонкостенную трубку, вместилище тру-
бки, имеющее возможность соединения
с источником давления и интрактор ис-
вернутой части трубки, отли-
чающийся тем, что, с целью
предупреждения травмирования илеоце-
кального соустья, трубка выполнена
из термопластичного полиуретана и
имеет наружный диаметр не более 16 мм.



Редактор С.Рекова

Составитель Н.Соловьева
Техред М.Дидык

Корректор С.Черни

Заказ 2988/ДСП

Тираж 314

Подписное


ВНИИПИ Государственного комитета по изобретениям и открытиям при ГКНТ СССР
113035, Москва, Ж-35, Раушская наб., д. 4/5.

Производственно-издательский комбинат "Патент", г.Ужгород, ул. Гагарина, 101

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I, translator *Lydia Dorisova*, herewith confirm that on my competence and knowledge the translation is full and exact. 20.11.04 

THE UNION OF SOVIET SOCIALIST REPUBLICS

THE STATE COMMITTEE OF INVENTIONS AND DISCOVERIES
AT THE USSR STATE COMMITTEE OF SCIENCE AND ENGINEERING
(THE STATE COMMITTEE OF INVENTIONS)

INVENTORS CERTIFICATE

№ 1592990

On the basis of commission by the USSR Government, the State Committee of Inventions has issued the following inventors certificate on the invention:

„The Intestinal Intubator”

The author (authors): **Matasov Sergey Alexandrovich**

The applicant: **the same**

Application №: **3410701**

Priority of the invention: **March 23rd, 1982**

Registered in the USSR State register of inventions

on May 15th, 1990

The effect of inventors certificate is applied on the whole territory of the Union of SSR.

The
Seal

Chairman of Committee:

Signature

Division head:

Signature

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I, translator Ando Borisova, herewith confirm that on my competence and knowledge the translation is full and exact.

20.11.04 [Signature]

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(19) **SU** (11) **1592990 A1**

(51) 5. A 61 M 25/00

THE STATE COMMITTEE
OF INVENTIONS AND DISCOVERIES
AT THE USSR SCSE

DESCRIPTION OF THE INVENTION TO THE INVENTORS CERTIFICATE

(21) 3410701/28-14
(22) 23.03.82
(75) S.A. Matasov
(53) 615.477.85 (088.8)
(56) USSR inventors' certificate № 839553, cl. A 61 M 25/00, 1978

(54) INTESTINAL INTUBATOR

(57) The invention pertains to the medical devices. Intestinal intubator in order to prevent the traumatization of ileocecal stoma comprises a thin-wall tube made from thermoplastic

polyurethane with outer diameter at most 16 mm, a container of tube having the possibility of connection with the source of pressure and an intractor of the everted part of tube. At use intestinal intubator it is possible to pass through the intestinal strictures and in a number of cases to realize the passing through obturating tumors, also it is possible to realize intubation of any section of gastrointestinal tract without traumatization of ileocecal stoma due to use of thermoplastic polyurethane. 1 ill.

The invention relates to medicine, namely to the devices for instrumental (pneumatic or pneumo-mechanical) transportation of diagnostic medical facilities in the gastrointestinal tract.

The aim of invention is prevention of traumatization of ileocecal stoma.

On the drawing there is represented the supposed intubator, general view.

Intubator comprises the thin-wall tube 1, the container which has a possibility of connection with the source of pressure made in the shape of chamber 2 from a transparent material, the manometer 3, intercommunicated with cavity of chamber 2, the reel 4 placed in the chamber 2, on the reel the tube 1 is placed. The tube 1 is made from thermoplastic polyurethane and has an outer diameter at most 16 mm. The chamber 2 has the branch pipe 5 for fastening of the everted end 6 of tube 1. Intubator also has the intractor

with resilient tube 7, pneumo-cuff 8 and manometer 9.

After passing of tube 7 of intractor through the channel in chamber 2 and its taking outside the branch pipe 5, the cuff 8 is connected to tube 7. The end of tube 1, together with intestinal drain 10 enclosed inside it, is passed through the cuff 8. Then the end 6 of tube 1 is everted by hands on the branch-pipe 5 and hermetically fixed to it.

Under the action of workspace 11 (air) pressure, the polyurethane profiled thin-wall tube 1 is everted in the intestine 12, not stretching its walls and at that releasing the drain 10, concluded in it.

Starting with the depth of about 1 m intubation is possible only with the help of intractor. By the connection of the outer end of intractor's resilient tube 7 with the pressure

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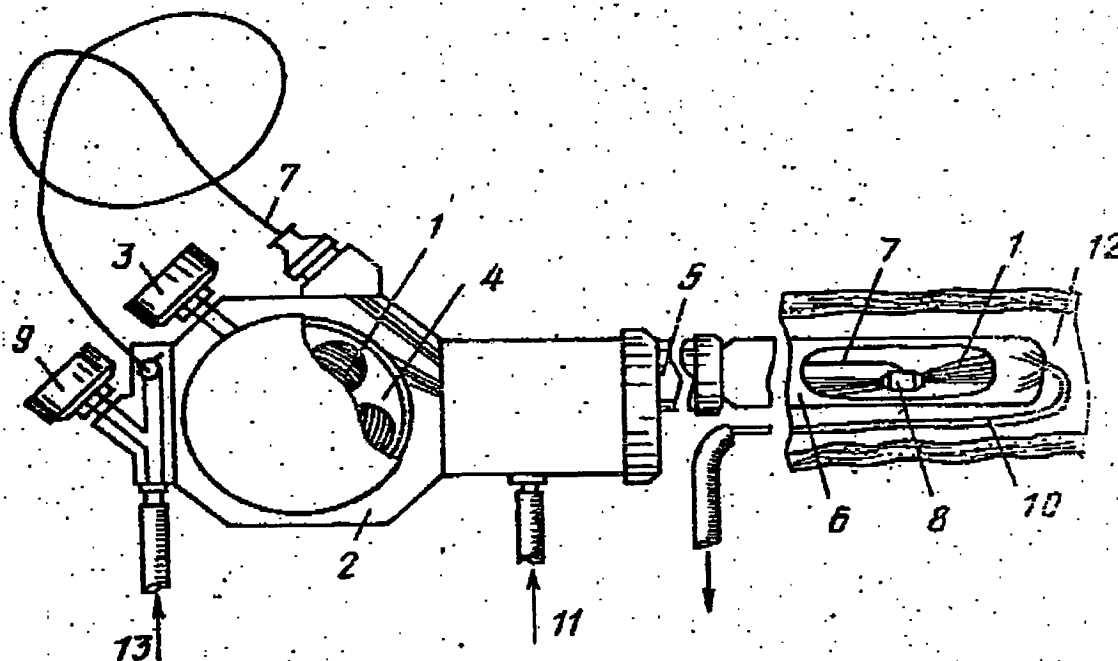
3
source 13 with the aid of inflating of
pneumo-cuff 8, there is achieved
the joining of polyurethane profiled
thin-wall tube 1 to it. By the hand-
insertion of intractor's resilient tube 7
into the cavity of chamber 2 and the
everted end 6 of tube 1 the pneumo-
mechanical intestinal intubation is
realized.

Using the intestinal intubator, it is
possible to pass through the intestinal
strictures, and in a number of cases
to realize the passing through
obturating tumors. It is possible to

4
realize intubation of any section of
gastrointestinal tract without
traumatization of ileocecal stoma.

1 claim:

5 An intestinal intubator, comprising a
thin-wall tube, a container of tube
which has a possibility of connection
with a source of pressure, and an
10 intractor of the uneverted part of tube,
differing in that in order to
prevent the traumatization of ileocecal
stoma, the tube is made from the
thermoplastic polyurethane and has the
15 outer diameter at most 16 mm.



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